Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
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March 4, 2016

Mr. Scott Smith
Novartis Institute for
Biomedical Research
250 Massachusetts Avenue
Cambridge, MA 02139

RE: CAMBRIDGE
Transmittal No.: X263720
Application No.: NE-15-007
Class: *SM79-7*
FMF No.: 383411
AIR QUALITY PLAN APPROVAL

Dear Mr. Smith:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the consolidation of previously issued plan approvals at your research and development facility located at 250 Massachusetts Avenue in Cambridge, Massachusetts ("Facility"). The previous Plan Approval Application MBR-03-COM-005 bears the seal and signature of Mr. Manuel Rei, Massachusetts Registered Professional Engineer Number 33732.

This Application was submitted in accordance with 310 CMR 7.02(12) Consolidation of Applicable Requirements as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator (i.e., the Permittee) must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Novartis Institutes for Biomedical Research ("Permittee") is an existing facility located at 181, 211, 220, and 250 Massachusetts Avenue and contiguous properties at 22 Windsor Street and 700 Main Street, Cambridge, Massachusetts ("the Facility"). The Permittee conducts biomedical research operations at the Facility. The Permittee proposes to expand operations as described below, which is expected to increase the facility-wide potential emissions from laboratory operations and combustion equipment.

The Facility includes several existing buildings on adjacent properties. The Permittee is currently constructing two new buildings, and relocating some operations into new leasehold building(s).

The existing and new emission units at the Facility are listed in Table 1. The Facility's biology and chemistry laboratory operations involve existing fume hoods at 250 Massachusetts Avenue, new fume hoods under construction at 181 Massachusetts Avenue and 22 Windsor Street, and fume hoods being relocated to 700 Main Street. Laboratory operations include HPLC, histology, separations, glassware cleaning, and surface decontamination.

Existing fuel burning equipment at the Facility includes four gas-fired boilers and two diesel fired emergency generators. The Permittee proposed to install and operate two gas-fired non-emergency co-generation engines at 181 Massachusetts Avenue and two diesel-fired emergency engines at 22 Windsor Street. Environmental Results Program (ERP) certifications for these units will be submitted following installation and start-up. The Permittee will operate one boiler in the 700 Main Street building; the remaining fuel burning equipment at 700 Main Street will be controlled by the landlord or other building tenants and is not considered part of Permittee's Facility.

The Permittee proposed to obtain a single consolidated permit covering all regulated emissions from existing and new combustion and process equipment/operations at the Facility. The facility-wide emissions will be restricted below major source thresholds for nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), hazardous air pollutants (HAP), particulate matter (PM), sulfur dioxides (SO_2), halogenated organic compounds (HOC), Acids /Bases, and Acetone.

REGULATORY REQUIREMENTS APPLICABLE TO EACH EMISSION UNIT

Certain emission units at the Facility are subject to individual air emission limitations imposed by either plan approval or ERP regulations, which are summarized below.

- The existing 2,000 kW Emergency Diesel Generator, designated as EU1 at 250 Massachusetts Avenue is subject to emission limitations as contained in Table 2 below.

- The existing 1,400 kW Emergency Diesel Generator, designated as EU2 at 250 Massachusetts Avenue is subject to emission limitations as contained in Table 3 below.

- Two (2) larger existing Boilers, each rated at 12.6 million Btu/hr, designated as EU3 and EU4, at 250 Massachusetts Avenue are required to comply with the emission limitations in the ERP regulation for boilers 310 CMR 7.26(33)(b).
- Two (2) smaller existing Boilers, each rated at 1.05 million Btu/hr, designated as EU5 and EU6, at 220 Massachusetts Avenue are exempt from permitting based on firing capacity less than 10 million Btu/hr, in accordance with 310 CMR 7.02(2)(b)15.a..
- Two (2) new Non-Emergency co-generation Engines, each 1,415 kW, designated as EU7 and EU8, at 181 Massachusetts Avenue will comply with the emission limitations in the ERP regulation for non-emergency engines, in accordance with 310 CMR 7.26(43) (b) and the emission limitations in EPA's New Source Performance Standard (NSPS) for stationary spark ignition internal combustion engines, in accordance with 40 CFR 60 Subpart JJJJ. A pollution control device (SCR and oxidation catalyst) will enable the engines to meet the above emission limitations. NSPS regulations require that the Permittee keep a maintenance plan in accordance with 40 CFR 60.4243(b)(2)(ii) and records of conducted maintenance and, to the extent practicable, maintain and operate the engines in a manner consistent with good air pollution control practice for minimizing emissions.
- Two (2) new emergency engines, each 2,000 kW, designated as EU9 and EU10, at 22 Windsor Street will comply with the emission limitations in the ERP regulation for emergency engines, in accordance with 310 CMR 7.26(42)(b) and the referenced 40 CFR 89.105 and 89.112.
- The existing Boiler, rated at 5.5 million Btu/hr, designated as EU11, at 700 Main Street is exempt from permitting in accordance with 310 CMR 7.02(2)(b)15.a, based on firing capacity less than 10 million Btu/hr.
- Approximately 400 laboratory fume hoods, designated as EU12, including 250 Massachusetts Avenue (existing), 181 Massachusetts Avenue (new), and 22 Windsor Street (new) are subject to emission limitations as contained in Table 5 below.

There are approximately 400 laboratory hoods at 181 and 254 Massachusetts Avenue. [1]The operations at the hoods will use the chemicals in the laboratory operations; processes include high performance liquid chromatography, histology, separations, glassware cleaning and surface decontamination.

[1] The Permittee holds a Plan Approval MBR-03-IND-001, for research laboratory hoods at a separate Cambridge facility at 100 Technology Square that remains in operation.

The air emission factors are calculated based on three (3) different laboratory operations: (1) chemicals used in instrumentation; (2) chemicals used in surface decontamination; and (3) acetone used in glassware cleaning. A conservative emission factor of 2.0 percent is applied for chemicals used in instrumentation. An emission factor of 100 percent is applied for chemicals used in surface decontamination. The Permittee uses the following for surface decontamination: ethanol purchased in 70% solution; and isopropyl alcohol. A calculated emission factor of 10 percent is applied for acetone used in glassware cleaning; the remaining 90 percent is recovered from the glass washer and disposed of properly.

In Buildings 608 and 613, the laboratory hoods will exhaust through a total of seven (7) laboratory exhaust fans and thirteen (13) roof top air handling units. The laboratory stacks at the 254 Massachusetts Avenue will exhaust through twelve (12) roof top air handling units.

- No more than 10 laboratory fume hoods will be located in 700 Main Street, which will be exempt from permitting as a *de minimis* air emission source, based on potential emissions being less than one ton per year of each individual air pollutant in accordance with 310 CMR 7.02(2)(b)7. The Permittee shall keep records of monthly and 12-month rolling emissions from 700 Main Street in order to document exempt status.

Based on AERMOD modeling, the Permittee demonstrated that the proposed project will not cause a condition of air pollution, as each of the predicted total concentrations will be below the National Ambient Air Quality Standards (NAAQS).

2. EMISSION UNIT IDENTIFICATION

Each Emission Unit ("EU") identified in Table 1 and associated stack is subject to and regulated by this Plan Approval:

Table 1

EU	Description	Stack Number
EU1	250 Mass Ave, Building 600, Caterpillar Model 3516B Emergency Diesel Generator 2000 KW, (existing)	250-G-1
EU2	250 Mass Ave, Building 600, Caterpillar Model 3512B Emergency Diesel Generator 1400 KW, (existing)	250-G-2
EU3	250 Mass Ave, Building 600, Cleaver Brooks FLX 1200 Boiler, 12.6 MMBtu/hr, natural gas fired, (existing)	250-B-1-2
EU4	250 Mass Ave, Building 600, Cleaver Brooks FLX 1200 Boiler, 12.6 MMBtu/hr, natural gas fired (existing)	250-B-1-2

Table 1		
EU	**Description**	**Stack Number**
EU5	220 Mass Ave, Building 602, Patterson Kelley Mach C-1050 Boiler, 1.05 MMBtu/hr, natural gas fired, (existing)	220-B-3-4
EU6	220 Mass Ave, Building 602, Patterson Kelley Mach C-1050 Boiler, 1.05 MMBtu/hr, natural gas fired (existing)	220-B-3-4
EU7	181 Mass Ave, Building 608, Jenbacher JMS420 B86 non-emergency engine 1415 KW, natural gas fired, SCR and catalytic controls, (new)	608-CHP-1
EU8	181 Mass Ave, Building 608, Jenbacher JMS420 B86 non-emergency engine 1415 KW, natural gas fired, SCR and catalytic controls, (new)	608-CHP-2
EU9	22 Windsor St, Building 613, Milton CAT Model 3516C DITA Emergency Diesel Generator 2000 KW, (new)	613-G-1
EU10	22 Windsor St, Building 613, Milton CAT Model 3516C DITA Emergency Diesel Generator 2000 KW, (new)	613-G-2
EU11	700 Main Street, Building 616, Cleaver Brooks FLX 550150 Boiler, natural gas fired, (existing)	700-B-1
EU12	250 Mass Ave (existing), 181 Mass Ave (new), 22 Windsor Street (new), Laboratory hoods VOC, Acetone, HOC, Acids/Bases, and HAP emissions.	various

Table 1 Key:
EU# = Emission Unit Number
KW = Kilowatts
MMBtu/hr = million British thermal units per hour
SCR = Selective Catalytic Reduction
VOC= Volatile Organic Compounds
HOC= Halogenated Organic Compounds
HAP= total Hazardous Air Pollutants

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational and Emission Limits as contained in Table 2, Table 3 and Table 6:

Table 2 - Emission Limitations - EU1
(Plan Approval MBR-03-COM-005)

Pollutant	Grams per brake horsepower-hour[1]	Pounds per hour[2]	Tons per Rolling 12 Month Period [2]
NOx	5.46	34.31	5.14
CO	0.35	2.22	0.33
VOC	0.13	0.83	0.13
PM	0.10	0.65	0.098
SO2	0.01	0.06	0.009

Table 2 Footnotes:
[1] These emission limitations shall only apply to engine loads of 75 % or greater
[2] These emission limitations shall apply to all engine loads.

Table 2, 3, 4, and 5 Key:
NO_x = Nitrogen Oxides
CO = Carbon Monoxide
VOC = Volatile Organic Compounds
PM = Particulate Matter
SO_2 = Sulfur Dioxide
HOC= Halogenated Organic Compounds
HAP= total Hazardous Air Pollutants

Table 3 - Emission Limitations - EU2 (Plan Approval MBR-03-COM-005)			
Pollutant	**Grams per brake horsepower-hour[1]**	**Pounds per hour[2]**	**Tons per Rolling 12 Month Period [2]**
NOx	6.14	27.38	4.10
CO	1.49	6.67	1.0
VOC	0.27	1.21	0.18
PM	0.14	0.61	0.091
SO2	0.01	0.04	0.007

Table 3 Footnotes:
[1] These emission limitations shall only apply to engine loads of 75 % or greater
[2] These emission limitations shall apply to all engine loads.

Table 4 - Facility-wide[1] Emission Limitations – (EU1 – EU6) (Plan Approval MBR-03-COM-005)		
Pollutant	**Tons per Month**	**Tons per Rolling 12 Month Period**
NO_x	8.73	13.10
CO	3.60	5.40
VOC	1.38	2.07
PM	0.86	1.29
SO_2	0.05	0.08

Table 5 - Emission Limitations - EU12 (Plan Approval NE-13-016)		
Pollutant	**Tons per Month**	**Tons per Rolling 12 Month Period**
VOC	2.5	6.2
Acetone	0.4	0.9
HOC	1.92	4.8
Acids / Bases	0.4	1.0
Laboratory Hoods HAP	1.92	4.8

Table 4 Footnotes:
[1]These emission limitations described in Plan Approval MBR-03-COM-005 apply to combined emissions from existing emission units EU1 through EU6.

Table 6			
EU	**Pollutant**	**Operational Limits**	**Emission Limits**
EU1	NO_x	* maximum 300 hours per 12 month rolling period * operate only using ULSD	See Table 2
	CO		
	VOC		
	PM		
	SO_2		
EU2	NO_x	* maximum 300 hours per 12 month rolling period * operate only using ULSD	See Table 3
	CO		
	VOC		
	PM		
	SO_2		
EU3 EU4	NO_x	* operate only using natural gas	ERP for Boilers 310 CMR 7.26(33)(b)
	CO		
	VOC		
	PM		

Table 6			
EU	**Pollutant**	**Operational Limits**	**Emission Limits**
	SO_2		
EU5 EU6 EU11	NO_x	*Exempt, each unit less than 10 MMBtu/hr * operate only using natural gas	310 CMR 7.02(2)(b)15.a
	CO		
	VOC		
	PM		
	SO_2		
EU7 EU8	NO_x	* operate only using natural gas * operate and maintain the engines in a manner consistent with good air pollution control practice	ERP for non-Emergency Engines 310CMR 7.26(43)(b) NSPS for Stationary Spark Ignition IC Engine, 40 CFR 60 Subpart JJJJ
	CO		
	VOC		
	PM		
	SO_2		
EU9 EU10	NO_x	* maximum 300 hours per 12 month rolling period * operate only using ULSD	ERP for Emergency Engines 310 CMR 7.26(42)(b) 40 CFR 89.105 and 89.112
	CO		
	VOC		
	PM		
	SO_2		
EU12	VOC	N/A	See Table 5 MBR-03-IND-020
	Acetone		
	HOC		
	Acids / Bases		
	Laboratory Hoods HAP		

Table 6 Key:
EU# = Emission Unit Number
N/A = Not Applicable
NO_x = Nitrogen Oxides
CO = Carbon Monoxide
VOC = Volatile Organic Compounds
PM = Particulate Matter
SO_2 = Sulfur Dioxide
HOC = Halogenated Organic Compounds
HAP = total Hazardous Air Pollutants.
TPY = tons per consecutive12-month period
ULSD = Ultra Low Sulfur diesel having maximum

sulfur content less than 0.0015 percent by weight

MMBtu/hr = million British thermal units per hour
KW = kilowatts
ERP = Environmental Results Program
NSPS = New Source Performance Standard
IC = Internal Combustion Engine

B. FACILITY-WIDE EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Facility-wide Emission Limits as contained in Table 7:

	Proposed Facility-wide Emission Limitations[2]	
Pollutant	**Total Facility-wide TPM**	**Total Facility-wide TPY**
NO_x	21.1	36.3
CO	8.5	36.1
VOC	5.0	25.3
PM	0.86	2.6
SO_2	0.05	0.21
Acetone	0.4	0.9
HOC	1.92	4.8
Acids /Bases	0.4	1.0
Total HAP	1.92	4.8

Table 7 Footnotes:
[2] Proposed Facility-wide Emission Limitation including all proposed new units as stated in Table 1

Table 7 Key:
NO_x = Nitrogen Oxides
CO = Carbon Monoxide
VOC = Volatile Organic Compounds
PM = Particulate Matter
SO_2 = Sulfur Dioxide
HOC = Halogenated Organic Compounds
HAP = Hazardous Air Pollutants
TPY = tons per consecutive12-month period
TPM = tons per month

C. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 8, 9, and 10:

Table 8

EU	Monitoring and Testing Requirements
EU1 EU2 EU9 EU10	1. The Permittee shall monitor usage of ULSD and the hours of operation for each unit, for each calendar month, as well as for the prior 11 months.
EU3 – EU8 EU11	2. The Permittee shall monitor usage of natural gas for each non-emergency generator units EU7 and EU8, for the month, as well as for the prior 11 months. The Pemittee shall monitor usage of natural gas for boiler units EU3 – EU6 for the month, as well as for the prior 11 months.
EU7 EU8	3. The Permittee shall operate and maintain each unit, including SCR and oxidation catalyst, in a manner consistent with good air pollution control practice, such that compliance with emission limits contained in 310 CMR 7.26(43)(b) and 40 CFR 60 Subpart JJJJ, can be determined.
EU9 EU10	4. The Permittee shall monitor emissions from each unit based on emission factors for certified engines provided by the engine manufacturer, such that compliance with emission limits contained in 310 CMR 7.26(42)(b), 40 CFR 89.105, and 40 CFR 89.112, can be determined.
EU12	5. The Permittee shall monitor usage of all chemicals, solvents, acetone, and VOC, HOC, acid/bases, and HAP containing materials for the month, as well as for the prior 11 months, such that compliance with monthly as well as 12-month rolling calendar limits contained in Table-5 can be determined.
Facility-wide	6. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	7. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13

Table 8 Key:
EU# = Emission Unit Number
ULSD = Ultra Low Sulfur diesel having maximum sulfur content less than 0.0015 percent by weight

Table 9	
EU	**Record Keeping Requirements**
EU1 – EU11	1. In order to verify that NO_x, CO, VOC, PM and SO_2 emission limits from each emission unit do not exceed the emission limits contained in Table 2, Table 3, and Table 7 of this Plan Approval, maintain on-site adequate records to document compliance with said emission limits. These records shall include monthly usage of ULSD, natural gas, and the hours of operation for each unit as applicable, for the month, as well as for the prior 11 months.
EU7 EU8	2. The Permittee shall keep maintenance plan and records of conducted maintenance of each unit, including SCR and oxidation catalyst.
EU12	3. In order to verify that VOC, HOC, acetone, acids/bases, and HAP emission limits from EU12 do not exceed the emission limits contained in Table 5 of this Plan Approval, maintain on-site adequate records to document compliance with said emission limits. These records shall include a list of VOC and/or HAP containing materials used during each month, the VOC and HAP content of each material, and the estimated actual emissions of VOC and HAP, based on usage and emissions factors, for the month, as well as for the prior 11 months.
Facility-wide	4. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational and emission limits contained in Table 2, Table 3, Table5, and Table 7 above. Records shall also include the estimated actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 30th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping.
	5. The Permittee shall maintain records of monitoring and testing as required by Table 8.
	6. The Permittee shall maintain a copy of this Plan Approval, underlying Application and most up-to-date SOMPs for the EUs approved herein. A sign referencing the Plan Approval and stating the location of these documents shall be posted at or adjacent to the subject equipment.
	7. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	8. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	9. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.

Table 9	
EU	**Record Keeping Requirements**
	10. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
Facility-wide	11. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 9 Key:

EU# = Emission Unit Number
SOMP = Standard Operating and Maintenance Procedure
NO_x = Nitrogen Oxides
CO = Carbon Monoxide
VOC = Volatile Organic Compounds
HAP = Hazardous Air Pollutants
PM = Particulate Matter
USEPA = United States Environmental Protection Agency
PCD = Pollution Control Device
ULSD = Ultra Low Sulfur diesel having maximum sulfur content less than 0.0015 percent by weight
SO_2 = Sulfur Dioxide

Table 10	
EU	**Reporting Requirements**
Facility-wide	1. The Permittee shall submit a semi-annual report of the emissions data required in Table 7 for the period of January 1 through December 31 inclusive to Northeast Regional Office of MassDEP, BAW Permit Chief, by no later than February 15, and August 15 of each year. An electronic version of the record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/dep/air/approvals/aqforms.htm#report.
	2. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	3. The Permittee shall submit a copy to MassDEP of any record required to be maintained by this Plan Approval within 30 days from MassDEP request.
	4. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for any emission testing as defined in Table 8 Monitoring and Testing Requirements.
	5. The Permittee shall submit to MassDEP a final stack emission test results report, within 60 days after emission testing, for any emission testing as defined in Table 8 Monitoring and Testing Requirements.

Facility-wide	6. The Permittee shall notify the Northeast Regional Office of MassDEP, BAW Permit Chief by telephone: 978-694-3200, email: nero.air@massmail.state.ma.us, or fax : 978-694-3499, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 and Table 3 requirements. A written report shall be submitted to Permit Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	7. The Permittee shall report triennially to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.

Table 10 Key:
EU# = Emission Unit Number
BAW = Bureau of Air and Waste

4. SPECIAL TERMS AND CONDITIONS

A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 11 below:

Table 11

EU	Special Terms and Conditions
EU1 EU2 EU7 EU8 EU9 EU10	1. The Permittee shall ensure that the height of the stack exit shall be at least 10 feet above the generator enclosure roof. Emission unit EU1, EU2, EU9, and EU10 shall be operated only during emergencies as defined in 310 CMR 7.26(41) for no more than 300 hours during any 12-month rolling period including normal maintenance and testing procedures as recommended by the manufacturer, unless the Permittee has requested and been granted written approval to operate this generator for a non-emergency event, such as a planned maintenance shutdown.
	2. The Permittee shall ensure that the noise generated by the operation of each unit shall be in compliance with Regulation 310 CMR 7.10 and the BAW's Noise Policy No. 90-001 (copy attached).
Facility-wide	3. The Permittee shall include all emissions associated with cleaning operations and exempt operations in the monthly and 12-month rolling emissions calculations to determine the Permittee's compliance status with emission limits contained in Table 7 above.

Table 11	
EU	**Special Terms and Conditions**
Facility-wide	4. The Permittee shall comply with the following operational practices: a. Store all process-related waste materials, fresh and spent solvents and VOC, acetone and/or HAP-containing materials in closed containers, except when using or removing these materials; b. Ensure that containers used for process-related waste materials, and VOC, acetone and/or HAP-containing materials are kept closed at all times except when using or removing these materials; c. Minimize spills of process-related waste materials, and VOC, acetone and/or HAP-containing materials; d. Convey process-related waste materials, and VOC, acetone and/or HAP-containing materials from one location to another in closed containers; e. Minimize VOC, acetone and/or HAP emissions from cleaning, storage, and conveying operations; f. Store and dispose of all VOC, acetone and/or HAP-containing process-related waste materials, or VOC, acetone and/or HAP-containing materials in non-absorbent containers that shall be kept closed except when placing materials in or removing materials from the container. g. All rags used in conjunction with any cleaning or spill cleanup activities shall be placed in tightly covered containers when not in use and shall be collected for proper recycling or disposal.
	5. This Plan Approval supersedes the previous Plan Approvals: MBR-03-COM-005, issued to the Permittee on September 22, 2003 and NE-13-016, issued to the Permittee on September 26, 2013, in their entirety, with the exception that all plan application materials submitted as part of those superseded Plan Approvals become part of this Plan Approval.
	6. The Permittee shall ensure that any modifications or new equipment installation which increases emissions by one (1) ton or more per year shall comply with the requirements of Regulation 310 CMR 7.02. Any other modifications (such as moving equipment for increased efficiency, changing solvents, or changing exhaust configurations) shall be noted on the Source Registration/Emission Statement Forms as required by Regulation 310 CMR 7.12. These modifications cannot violate any condition of this facility-wide Approval, including the emission restrictions.
	7. The Permittee shall submit Compliance Certifications Form within 60 days of commencement of operation for any emergency generator and non-emergency generator to MassDEP for any proposed emergency generators and non-emergency generator under the Environmental Results Program (ERP) in accordance with 310 CMR 7.26(42) and 310 CMR 7.26(43), as applicable.
	8. The Permittee shall report decommissioning of any existing emergency generators and boilers on the next Source Registration Forms that Permittee is required to submit to MassDEP.

Table 11	
EU	**Special Terms and Conditions**
	9. The Permittee shall label each emission unit (EU) approved herein for proper monitoring, recordkeeping, and reporting purposes.

Table 11 Key:
EU# = Emission Unit Number
BAW = Bureau of Air and Waste
VOC = Volatile Organic Compounds
HAP = Hazardous Air Pollutants
SOMP = Standard Operating and Maintenance Procedure

B. The Permittee shall install and utilize each exhaust stack with the following parameters as contained in Table 12 that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as "shanty caps" and "egg beaters.", for the stack number and associated Emission Units as contained in Table 1 that are regulated by this Plan Approval.

Table 12				
Stack#	**Stack Height Above Ground (feet)**	**Stack Inside Exit Dimensions (inches)**	**Stack Gas Exit Velocity Range (feet per second)**	**Stack Gas Exit Temperature Range (^{o}F)**
250-G-1 (EU1)	122	18	161	963
250-G-2 (EU2)	122	18	114	876
250-B-1-2 (EU3)	122	36	33	446
250-B-1-2 (EU4)	122	36	33	446
220-B-3-4 (EU5)	123	8	10	115 - 140
220-B-3-4 (EU6)	123	8	10	115 - 140
608-CHP-1 (EU7)	167	20	44	322
608-CHP-2 (EU8)	167	20	44	322
613-G-1 (EU9)	151	16	181	763
613-G-2 (EU10)	151	16	181	763
700-B-1 (EU11)	90	16	10 - 25	470

EU12				
608-AHU1 - AHU6	157	50	51	70
613-AHU7 - AHU11	141	36	59	70
613-AHU12 - AHU13	141	34	69	70
608-LEF1 - LEF2	152	16	50	70
613-LEF3 – LEF4	136	16	50	70
608-LEF5	152	15	51	70
613-LEF6	136	21	48	70
613-LEF7	136	8	48	70
254 MAve-1 - 12	136	36	110 - 140	70

Table 12 Key:
^{o}F = Degree Fahrenheit
AHU = air handling unit
LEF = lab handling fan

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

B. If asbestos remediation/removal occurs as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

C. If construction or demolition of an industrial, commercial or institutional building occurs as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future. Nor does this Approval imply compliance with this or any other applicable federal, state, or local regulations now or in the future.

F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

G. This Plan Approval may be suspended, modified, or revoked by MassDEP if at any time, MassDEP determines that any condition or part of this Plan Approval is being violated.

H. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

I. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact Dhiraj B. Desai by telephone at 978-694-3282, or in writing at the letterhead address.

Sincerely,

Dhiraj B. Desai
Environmental Engineer

Susan P. Ruch
Acting Permit Chief and Deputy Regional Director
Bureau of Air and Waste

cc: Board of Health, 119 Windsor St, Cambridge, MA 02139
Fire Headquarters, 491 Broadway, Cambridge, MA 02138
MassDEP/Boston – Y. Tian (E-Copy)
MassDEP/NERO – M. Bolis, E. Braczyk (E-Copy)
MassDEP/NERO – M. Persky, D. Desai (Hard-Copy)